The embodiments of the invention for which as exclusive privilege and property right is claimed are defined as follows.

1. A method for detection of hydrocarbon deposits onshore by measuring infrasonic spectral characteristics of microseismic noise of the earth in a selected area, the steps comprising:

placing at least one receiver of seismic vibrations capable of recording at least one data component within a 2 to 5 Hz frequency range over an expected hydrocarbon deposit onshore in the selected area;

registering at least once the spectral characteristics of the microseismic noise of the earth within the 2 to 5 Hz at at least one point on the selected area as a passive information signal; and

measuring the presence of a spectral anomaly on a spectrum of the passive information signal relative a spectrum of an information signal from an area known not to contain hydrocarbon deposits.

- 2. The method of claim 1 wherein the passive information signal is recorded for up to 60 minutes.
- 3. The method of claim 1 wherein at least two receivers of the seismic vibrations are used and placed at a distance to each other of up to 500 meters.
- 4. The method for detection of hydrocarbons deposits onshore by measuring infrasonic spectral characteristics of microseismic noise of the earth in a selected area, the steps comprising:

placing at least one receiver of seismic vibrations capable of recording at least one data component within a 2 to 5 Hz frequency range over an expected hydrocarbon deposit onshore in the selected area;

generating seismic vibrations using a vibrator;

registering at least once the spectral characteristics of the microseismic noise of the earth within the 2 to 5 Hz at at least one point on the selected area before the generating of the seismic vibrations as a passive information signal and during the generating of the seismic vibrations as an active information signal; and

measuring the presence of a spectral anomaly on a spectrum of the active information signal relative to the spectrum of the passive information signal.

- 5. The method of claim 4 wherein the passive information signal is recorded for up to 20 minutes before the generation of seismic vibrations.
- 6. The method of claim 4 wherein the generation of seismic vibrations is for at least 3 minutes.
- 7. The method of claim 4 wherein at least two receivers of the seismic vibrations are used and placed at a distance to each other of up to 500 meters.
- 8. The method of claim 7 wherein the at least two receivers of the seismic vibrations are placed at a distance of up to 500 meters from the vibrator.

9. A method for detection of hydrocarbon deposits offshore by measuring infrasonic spectral characteristics of microseismic noise of the earth in a selected area, the steps comprising:

placing on a sea bottom at least one receiver of seismic vibrations capable of recording at least one data component within a 2 to 5 Hz frequency range over an expected hydrocarbon deposit;

registering at least once the spectral characteristics of the microseismic noise of the earth within the 2 to 5 Hz at at least one point on the sea bottom as a passive information signal; and

measuring the presence of a spectral anomaly on a spectrum of the passive information signal relative a spectrum of an information signal from an area known not to contain hydrocarbon deposits.

- 10. The method of claim 9 wherein the passive information signal is recorded for at least 40 minutes.
- 11. The method of claim 9 wherein at least two receivers of the seismic vibrations are used and placed at a distance to each other of up to 500 meters.
- 12. The method for detection of hydrocarbon deposits offshore by measuring infrasonic spectral characteristics of microseismic noise of the earth in a selected area, the steps comprising:

placing on a sea bottom at least one receiver of seismic vibrations capable of

recording at least one data component within a 2 to 5 Hz frequency range over an expected hydrocarbon deposit;

generating seismic vibrations;

registering at least once the spectral characteristics of the microseismic noise of the earth within a 2 to 5 Hz frequency range at at least one point on the sea bottom before the generating of the seismic vibrations as a passive information signal and during the generating of the seismic vibrations as an active information signal; and

measuring the presence of a spectral anomaly on a spectrum of the active information signal relative to a spectrum of the passive information signal.

- 13. The method of claim 12 wherein the passive information signal is recorded for at least 10 minutes before the generation of seismic vibrations.
- 14. The method of claim 12 wherein at least two receivers of the seismic vibrations are used and placed at a distance to each other of up to 500 meters.
- 15. The method of claim 14 wherein the at least two receivers of the seismic vibrations are placed at an equal distance from the source of seismic vibrations.
- 16. The method of claim 12 wherein the generation of seismic vibrations is for at least 5 minutes.

17. A method for monitoring a producing oil and gas field by measuring infrasonic spectral characteristics of microseismic noise of the earth: the steps comprising:

placing at least one receiver of seismic vibrations capable of recording at least one data component within a 2 to 5 Hz frequency range over a producing hydrocarbon deposit at control points;

periodically recording as an information signal the spectral characteristics of the microseismic noise of the earth within 2 to 5 Hz at the control points, and

detecting an edge of the hydrocarbon deposit at a control pint at which the spectral anomaly relative to a spectrum from an area known not to contain hydrocarbons disappears.

- 18. The method as described in claim 17 wherein the passive information signal is recorded in a range of 40 to 60 minutes.
- 19. The method as described in claim 17 wherein the information signal is recorded before and during the generation of seismic vibrations.
- 20. The method as described in claim 19 wherein the seismic vibrations are generated for at least 3 minutes.

21. A method for monitoring fill levels of subsurface gas storage by measuring infrasonic spectral characteristics of microseismic noise of the earth, the steps comprising:

placing receivers of seismic vibrations capable of recording at least one data component within a 2-5 Hz frequency range at surface control stations, which approximately define the fill levels of the gas storage;

during gas storage operation, periodically recording as an information signal the spectral characteristics of microseismic noise of the earth within 2 to 5 Hz at each control station; and

measuring an absence of a spectral anomaly relative to a spectrum recorded outside of the gas storage, to determine if there is gas below each control station.

- 22. The method as described in claim 21 wherein the information signal is recorded in a range of 40 to 60 minutes.
- 23. The method as described in claim 21 further including the step of generating seismic vibrations for at least 3 minutes.
- 24. The method as described in claim 23 wherein the information signal is recorded before and during the generation of the seismic vibrations.